

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all previous versions and listings of claims in the present application.

75. (currently amended) A system, comprising:

an integral automotive linkage configured to mount within an automobile to link two or more elements integrally together in an assembly, comprising:

a hollow elongated member having a constant cross-section along the entire length of the hollow elongated member, wherein the constant cross-section comprises a multi-sided interior defining first and second sockets at respective first and second opposite ends of the hollow elongated member, ~~wherein~~ the multi-sided interior comprises greater than four sides defining a plurality of angularly offset socket positions;

a first joint member coupled to the first socket, wherein the first joint member comprises an attachment portion having a multi-sided perimeter mated with the multi-sided interior of the first socket, the multi-sided perimeter has fewer sides than the multi-sided interior, and the multi-sided perimeter mates with different sides of the multi-sided interior in the plurality of angularly offset socket positions; and

a second joint member coupled to the second socket, wherein the second joint member comprises another attachment portion having another multi-sided perimeter mated with the multi-sided interior of the second socket, the other multi-sided perimeter has fewer sides than the multi-sided interior, and the other multi-sided perimeter mates with different sides of the multi-sided interior in the plurality of angularly offset socket positions.

76. (cancelled)

77. (cancelled)

78. (previously presented) The system of claim 75, wherein the first and second joint members comprise the same attachment portion.

79. (withdrawn) The system of claim 75, wherein the first and second joint members are selected from a plurality of different joint members having the same attachment portion.

80. (cancelled)

81. (cancelled)

82. (previously presented) The system of claim 75, wherein the constant cross-section is a uniformly extruded geometry along the entire length of the hollow elongated member.

83. (currently amended) A system, comprising:

an elongated automotive linkage comprising a first end, a second end, and a uniform cross-section from the first end to the second end configured to mount integrally within an automobile, wherein the uniform cross-section comprises a geometry characterized by a plurality of superimposed squares that are rotated about 45 degrees relative to one another; and

a family of joints each comprising a modular attachment portion configured to mate with the uniform cross-section at the first or second end of the elongated automotive linkage.

84. (withdrawn) The system of claim 83, wherein the family of joints comprise a ball joint, or a polygonal receptacle joint, or a circular receptacle joint, or a square receptacle joint, or a hook-shaped joint, or a bushing and grommet joint, or a combination thereof.

85. (withdrawn) The system of claim 83, wherein the family of joints comprise a plurality of different rotatable joints.

86. (previously presented) The system of claim 83, wherein the uniform cross-section comprises a uniform hollow interior.

87. (withdrawn) The system of claim 83, wherein the elongated automotive linkage and the family of joints comprise a family of different automotive suspension or steering linkages.

88-94. (cancelled)

95. (currently amended) A system, comprising:

a family of linkage joints having different geometries and joint mechanisms, wherein each of the family of linkage joints has a standard attachment portion configured to mate with a uniform lengthwise cross-section of an elongated hollow linkage, and configured to mount integrally with a component of a system of interconnected machine elements,

wherein the standard attachment portion comprises a first set of sides configured to mate mutually exclusively with a second set of sides and a different third set of sides of a multi-sided interior of ~~wherein the uniform lengthwise cross-section comprises a multi-sided interior having greater than four flat sides.~~

96. (previously presented) The system of claim 95, wherein the standard attachment portion comprises a square geometry.

97. (withdrawn) The system of claim 95, wherein the family of linkage joints comprises a plurality of different rotatable joint structures.

98. (withdrawn) The system of claim 95, wherein the family of linkage joints comprises a plurality of different male and female joint structures.

99. (currently amended) A system, comprising:

a linkage having a uniform socket geometry along the entire length of the linkage, wherein the uniform socket geometry comprises a multi-sided interior defined by a plurality of superimposed squares;

a first joint coupled to the uniform socket geometry at a first end of the linkage via a first set of mating walls defined by the plurality of superimposed squares; and

a second joint coupled to the uniform socket geometry at a second end of the linkage opposite the first end, ~~wherein the first and second joints are configured to mate integrally with first and second mating joints, respectively~~ via a second set of mating walls defined by the plurality of superimposed squares, wherein the first and second sets of mating walls are different from one another.

100. (cancelled)

101. (cancelled)

102. (currently amended) The system of claim 75, wherein the first joint member, or the second joint member, or both, comprise a polygonal receptacle joint.

103. (currently amended) The system of claim 75, wherein the first joint member, or the second joint member, or both, comprise a circular receptacle joint.

104. (withdrawn-currently amended) The system of claim 75, wherein the first joint member, or the second joint member, or both, comprise a bushing and grommet joint.

105. (withdrawn-currently amended) The system of claim 75, wherein the first joint member, or the second joint member, or both, is at least substantially made of plastic.

106. (withdrawn) The system of claim 83, wherein the family of joints comprises a ball joint, a polygonal receptacle joint, a circular receptacle joint, and a bushing and grommet joint.

107. (withdrawn) The system of claim 83, wherein the family of joints comprises a female joint and a male joint.

108. (withdrawn) The system of claim 107, wherein the male joint comprises a rotatable joint and the female joint comprises a non-rotatable joint.

109. (withdrawn) The system of claim 95, wherein the family of linkage joints comprises at least one plastic joint and at least one metallic joint.

110. (withdrawn) The system of claim 125, wherein the metallic non-rotatable joint is a polygonal receptacle joint.

111. (withdrawn) The system of claim 110, wherein the polygonal receptacle joint is a square receptacle joint.

112. (withdrawn) The system of claim 125, wherein the metallic non-rotatable joint is a circular receptacle joint.

113. (withdrawn) The system of claim 125, wherein the metallic non-rotatable joint is a hook-shaped joint.

114. (withdrawn) The system of claim 75, wherein the first joint member comprises a male joint and the second joint member comprises a female joint.

115. (previously presented) The system of claim 75, wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed multi-sided closed geometries.

116. (previously presented) The system of claim 75, wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed squares.

117. (withdrawn) The system of claim 83, wherein the family of joints comprise a rotatable joint and a non-rotatable joint.

118-121. (cancelled)

122. (withdrawn) The system of claim 95, wherein the family of linkage joints comprises a ball joint, a polygonal receptacle joint, a generally circular joint, and a bushing and grommet joint.

123. (previously presented) The system of claim 95, wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed multi-sided closed geometries.

124. (previously presented) The system of claim 95, wherein the multi-sided interior comprises a geometry characterized by a plurality of superimposed squares.

125. (withdrawn) The system of claim 99, wherein the first joint comprises a plastic ball joint and the second joint comprises a metallic non-rotatable joint.

126. (new) The system of claim 75, wherein the constant cross-section is defined by squares that are rotated angularly about the axis of the hollow elongated member.

127. (new) The system of claim 75, wherein the constant cross-section is defined by squares that are rotated about 45 degrees about the axis of the hollow elongated member.

128. (new) The system of claim 83, wherein each of the plurality of squares defines a different angular socket position having a different set of four walls.

129. (new) The system of claim 83, wherein the modular attachment portion mutually exclusively mates with different sets of walls of the plurality of superimposed squares.

130. (new) The system of claim 95, wherein the first set of sides comprises four sides defining a first square, the second set of sides comprises four sides defining a second square, the third set of sides comprises four sides defining a third square, the first square is configured to mate mutually exclusively with the second square without the third square, and the first square is configured to mate mutually exclusively with the third square without the second square.

131. (new) An automobile linkage, comprising:
at least one female joint member comprising a socket and a pin having a polygonal cross-section; and

an elongated hollow member comprising a plurality of peripheral walls defining a hollow multi-sided interior having a constant cross-section defining first and second sockets at respective first and second opposite ends of the elongated hollow member for receiving the at least one female joint member, the multi-sided interior having a greater number of sides than the polygonal cross-section, the hollow interior comprising a plurality of angularly offset socket positions, each socket position having the polygonal cross-section defined by a different corresponding set of peripheral walls;

wherein the plurality of sockets are concentrically superimposed upon each other about the longitudinal axis of the elongated hollow member to define the angularly offset socket positions;

wherein the female joint member is rigidly fixed in a selected socket position by the pin of the female joint member being inserted into the hollow interior of the elongated hollow member in a selected angular orientation as to abut only a selected corresponding set of peripheral walls.